

IN THE CLAIMS:

The status of the claims in the present application is provided herein below. No amendments have been made to the claims in this response.

Claims 1-39. (Cancelled)

1                   40.   (Previously added) A method for synthesizing an oligosaccharide  
2 comprising the steps of:

3                               (a)    combining a glycosyl donor molecule and a glycoside  
4 acceptor molecule in a reaction mixture; and

5                               (b)    enzymatically coupling the donor molecule to the acceptor  
6 molecule using a mutant form of glycosidase enzyme to form the oligosaccharide, said enzyme  
7 being selected from among glycoside enzymes having two catalytically active amino acids with  
8 carboxylic acid side chains within the active site of the wild-type enzyme, and said mutant  
9 enzyme being mutated to replace one of said amino acids having a carboxylic acid side chain  
10 with a different amino acid of comparable or smaller size, said different amino acid having a  
11 non-carboxylic acid side chain characterized in that, said glycosyl donor molecule having a  $\beta$   
12 configuration and said glycoside acceptor molecule having an  $\alpha$  configuration.

1                   41.   (Previously added) The method of claim 40, wherein the glycosidase  
2 enzyme is a stereochemistry retaining enzyme in which one of the carboxylic acid side chains in  
3 the active site functions as an acid/base catalyst and the other carboxylic acid side chain  
4 functions as a nucleophile, and wherein the amino acid having the nucleophile carboxylic acid  
5 side chain is replaced in the mutant enzyme.

1                   42.   (Previously added) The method of claim 41, wherein the enzyme is a  $\beta$ -  
2 glycosidase.

1                   43.   (Previously added) The method of claim 42, wherein the glycosyl donor  
2 molecule is an  $\alpha$ -glycosyl fluoride.

1                   44.     (Previously added) The method of claim 43, wherein the  $\alpha$ -glycosyl  
2 fluoride is an  $\alpha$ -glucosyl fluoride.

1                   45.     (Previously added) The method of claim 43, wherein the  $\alpha$ -glycosyl  
2 fluoride is a  $\alpha$ -galactosyl fluoride.

1                   46.     (Previously added) The method of claim 40, wherein the enzyme is a  $\beta$ -  
2 glycosidase.

1                   47.     (Previously added) The method of claim 40, wherein the enzyme is a  $\beta$ -  
2 glucosidase.

1                   48.     (Previously added) The method of claim 40, wherein the acceptor  
2 molecule is an aryl-glycoside.

1                   49.     (Previously added) The method of claim 48, wherein the acceptor  
2 molecule is a nitrophenyl-glycoside.

1                   50.     (Previously added) The method of claim 40, wherein the glycosidase  
2 enzyme is a stereochemistry inverting enzyme in which one of the carboxylic acid side chains in  
3 the active site functions as an acid catalyst and the other carboxylic acid side chain functions as a  
4 base catalyst, and wherein the amino acid having the carboxylic acid die chain which functions  
5 as a base catalyst is replaced in the mutant enzyme.

Claims 51-54. (Withdrawn)

1                   55.     (Previously added) The method of claim 40, wherein the glycosidase  
2 enzyme is selected from the group consisting of  $\beta$ -glucosidases,  $\beta$ -galactosidases,  $\beta$ -  
3 mannosidases,  $\beta$ -N-acetyl glucosaminidases,  $\beta$ -N acetyl galactosaminidases,  $\beta$ -xylosidases,  $\beta$ -  
4 fucosidsases, cellulases, xylanases, galactanases, mannanases, hemicellulases, amylases,  
5 glucoamylases,  $\alpha$ - glucosidases,  $\alpha$ -galactosidases,  $\alpha$ -mannosidases,  $\alpha$ -N-acetyl glucosaminidases,  
6  $\alpha$ -N acetyl galactosaminidases,  $\alpha$ -xylosidases,  $\alpha$ -fucosidsases, and neuraminidases/sialidases.

Claims 56-70. (Withdrawn)